



San Jacinto River Authority

ADMINISTRATIVE OFFICE
P.O. Box 329 • Conroe, Texas 77305
(T) 936.588.3111 • (F) 936.588.3043

March 3, 2020

Ms. Samantha Streid Reiter
General Manager
Lone Star Groundwater Conservation District
655 Conroe Park North Drive
Conroe, Texas 77303

Dear Ms. Reiter,

Thank you for your service as a representative on the Groundwater Management Area (GMA) 14 Joint Planning Committee. SJRA staff attended the recent meeting of the GMA 14 Joint Planning Committee on February 24, 2020. As the owner of 38 Lone Star Groundwater Conservation District (LSGCD) permitted groundwater wells in Montgomery County, we are very concerned about the future conditions of the aquifers as presented by Mr. Mike Keester, a hydrogeologist with LRE Water and representing the LSGCD.

At the February meeting, Mr. Keester provided a presentation titled “Identification and Simulation of Water Management Strategies from the 2017 State Water Plan”. Representatives of LSGCD also distributed to the Committee tabular results from groundwater availability model (GAM) runs of 11 different scenarios of groundwater pumpage from the Gulf Coast Aquifer. Representatives of LSGCD clearly stated that the data presented to the GMA 14 Joint Planning Committee had not yet been approved by the LSGCD Board.

Also during the meeting, Wade Oliver, Intera, Inc. and consultant for GMA 14, provided a presentation titled “Groundwater Availability Model Run Results”. The presentation focused on the results of a GAM run for the scenario of groundwater pumping that resulted in 75 percent of the 2009 available drawdown remaining in 2070. Another way of stating it is that 25 percent of the available drawdown would be utilized and exhausted by 2070.

We have reviewed the information presented/distributed at the GMA 14 meeting, and we have the following concerns.

FLOOD MANAGEMENT DIVISION
P.O. Box 329
Conroe, Texas 77305
(T) 936.588.3111
(F) 936.588.1114

GRP DIVISION
P.O. Box 329
Conroe, Texas 77305
(T) 936.588.1662
(F) 936.588.7182

HIGHLANDS DIVISION
P.O. Box 861
Highlands, Texas 77562
(T) 281.843.3300
(F) 281.426.2877

LAKE CONROE DIVISION
P.O. Box 329
Conroe, Texas 77305
(T) 936.588.1111
(F) 936.588.1114

WOODLANDS DIVISION
2436 Sawdust Road
The Woodlands, Texas 77380
(T) 281.367.9511
(F) 281.362.4385

1. **Primary Simulations – Desired Future Condition.** Of the 11 different scenarios reviewed by the LSGCD, only two were presented – “Alt WMS 1” and “Alt WMS 5” – and were designated as “primary simulations” (PowerPoint slide 15). What is meant by “primary simulations”? Are they reflective of LSGCD’s Desired Future Condition (DFC) for the aquifers in GMA 14 and Montgomery County? Do any of the other nine groundwater scenarios and resulting desired future conditions remain under consideration by LSGCD?

2. **Impact of aquifer drawdown.** The table titled “Year 2070 Simulated Pumping” indicates pumping amounts (assumed units of acre-feet per year) for LSGCD’s two “primary simulations”, the scenario for 75 percent of the 2009 available drawdown remained in 2070, and “Run D” previously considered by LSGCD are as follows:

Scenario	Chicot	Evangeline	Jasper	Total
Alt WMS 1	14,175	27,306	91,689	133,170
Alt WMS 5	1,722	41,484	90,003	133,209
75% Rem. Avail. Draw.	16,229	32,014	29,010	77,253
Run D	11,250	43,917	44,330	99,497

Table titled “2070 Average Drawdown” indicates the following average drawdown (assumed units in feet) for the same four scenarios are as follows:

Scenario	Chicot	Evangeline	Jasper
Alt WMS 1	30	3	608
Alt WMS 5	31	29	607
75% Rem. Avail. Draw.	31	6	187
Run D	30	21	229

Has the LSGCD considered the significant difference between the definition of “available drawdown” used in the scenarios and the actual drawdown available to the LSGCD’s well permittees? We are concerned that the “available drawdown” used in the analysis presented to GMA 14 has been previously defined as the distance from the existing aquifer level to the bottom of the well. In reality, the availability of groundwater and the pumpage rate itself is much more limited than that definition would imply.

Run D considered by LSGCD in 2018 was developed based on a review of available well data throughout Montgomery County, including consideration of the negative impacts to water supply wells that would result from the predicted drawdowns. This analysis was reviewed/developed by engineers representing Conroe and SJRA – the largest groundwater users in Montgomery County. Based on that review it was estimated that any drawdown

greater than approximately 230 feet in the Jasper aquifer could result in significant negative impacts to existing wells. The pumpage rate that yielded an average of 230 feet of drawdown was approximately 100,000 acre-feet per year.

Has the LSGCD considered the negative impacts to the production output, functionality, and overall viability of existing wells screened in the Jasper aquifer if an average of over 600 feet of drawdown is allowed? If so, how does the LSGCD propose that those negative impacts be mitigated?

Has the LSGCD considered the financial burden to its permittees and ultimately the water rate payers in Montgomery County to rework or completely replace wells screened in the Jasper aquifer if an average of over 600 feet of drawdown is allowed? If so, how does the LSGCD balance these additional costs with the further “development of groundwater resources” as indicated on slide 2 of LSGCD’s presentation?

Has LSGCD developed an estimate of available well yield for a new Jasper well if water levels in that layer are over 600 feet lower than existing levels?

3. **Estimated Subsidence.** The table titled “Maximum Simulated Subsidence” indicates the following subsidence (assumed in feet) for LSGCD’s two “primary simulations”, the scenario for 75 percent of the 2009 available drawdown remaining in 2070, and “Run D” previously considered by LSGCD are as follows:

Scenario	2009	2070	Additional Max. Subsidence
Alt WMS 1	3.8	5.3	1.5
Alt WMS 5	3.8	5.3	1.5
75% Rem. Avail. Draw.	3.8	5.6	1.8
Run D	3.8	4.9	1.1

Table titled “2070 Maximum Simulated Compaction” (assumed in feet) for the same four scenarios is as follows:

Scenario	Chicot	Evangeline	Jasper
Alt WMS 1	4.1	3.3	0.3
Alt WMS 5	4.0	3.5	0.3
75% Rem. Avail. Draw.	4.4	3.4	0.2
Run D	4.1	3.8	0.2

How does the LSGCD conclude that the results for compaction of the Jasper aquifer and the total subsidence are valid considering the two designated primary simulations have over 70%

more total pumping in all aquifers and 210% more pumping in the Jasper aquifer resulting in 225% more drawdown in the Jasper than the scenario of 75% remaining available drawdown, yet the resulting compaction of the Jasper aquifer and total additional subsidence is nearly the same for all three scenarios?

Did the LSGCD consider the recent research results by Southern Methodist University using InSAR technology that concluded fault activation and subsidence is related to excessive groundwater withdrawal in the Jasper aquifer?

Did the LSGCD consider the recent annual report by the Harris-Galveston Subsidence District that indicated a direct correlation of excessive groundwater pumping in the Jasper aquifer and subsidence at its PAM 13 site in Montgomery County?

As an owner of 38 LSGCD permitted groundwater wells in Montgomery County, the future conditions of the aquifers as portrayed by the two “primary simulations” highlighted in LSGCD’s presentation should not be considered “desired” based on the potentially devastating negative impacts that would result.

We therefore would appreciate the LSGCD considering the above noted questions/concerns as you thoroughly evaluate and consider the information presented by its consultant at the GMA 14 Joint Planning Committee Meeting in determining the Desired Future Conditions of our groundwater aquifers.

Sincerely,



Ronald D. Kelling, P.E.
Deputy General Manager
San Jacinto River Authority